

AMENDMENTS TO THE DRAWINGS

Amended drawings including reference number 15 are attached.

REMARKS

The Present Invention

The present invention teaches a valve assembly for use in a package. The package is configured to hold products for heating. The valve assembly includes a tubular body having an open end, a closed end, and a side wall extending between the open end and the closed end. The side wall includes an inner wall surface defining a recess. The closed end includes a planar surface extending fully between opposite sides of the inner wall surface. The planar surface is generally smooth throughout. The planar surface includes an aperture for releasing pressure generated by the heated product. The valve assembly includes a retaining member disposed within the recess of the tubular body and a membrane element formed of cast polypropylene. The retaining member is disposed fittingly within the recess and the membrane element is disposed between the retaining member and the closed end. The membrane element is engaged with the planar surface of the closed end and covers the aperture. When the product is heated, pressure escapes through the aperture so as to displace a portion of the membrane element away from the planar surface of the closed end. Furthermore, the cast polypropylene membrane does deform thus the product may be heated multiple times.

Status

Claims 1-22 were originally filed presented. The claims 4, 7, 8, 16, 19, and 20 were cancelled. Accordingly, it is claims 1-3, 5, 6, 9-15, 17, 18, 21, and 22, as now amended which are at issue.

Objections to the Drawings

The drawings stand objected to for failing to point out the side wall (15). The drawings have been amended to include reference number 15 which indicates the side wall extending between the open and closed ends. No new matter was entered.

Objections to the Specification

The specification is objected to for failing to provide proper antecedent basis for the claimed subject matter, namely, the “side wall.” Applicant amended to the specification to recite the side wall, as provided above. No new matter was entered.

Claim Rejections

35 U.S.C. §112, First Paragraph

Claims 1-3, 5, 6, 9-15, 17, 18, 21, and 22 stand rejected under 35 U.S.C. 112, first paragraph because Examiner asserts that the specification does not reasonably provide enablement for “a membrane formed of cast polypropylene so as to not permanently deform when the package is being heated.” Applicant submits that one of ordinary skill in the art understands that cast polypropylene, unlike polypropylene, does not deform when heated. More specifically, the membrane is generally a thin sheet of material. The thickness of the membrane is configured to allow the membrane to bend so as to give way for steam to exit the apertures in the closed end of the valve during heating operations such as microwaving. Applicant submits that cast polypropylene and the material characteristics of cast polypropylene are known. Applicant further submits that one skilled in the art would understand and appreciate that a cast polypropylene membrane would not deform under such conditions but that a polypropylene membrane would. Accordingly, Applicant submits that Examiner’s argument that one skilled in the art would not be able to practice the invention as claimed is unfounded as one skilled in the

art would be able to make the valve as described in the specification and that the valve would function in accordance with the teachings of the specification.

Claims 1-3, 5, 6, 9-15, 17, 18, 21, and 22 also stand rejected under 35 U.S.C. 112, second paragraph because the “side wall” was not recited in the specification. Applicant amended the specification to include the side wall, support for which is clearly shown in the drawings. No new matter was added.

Double Patenting

Claims 1-3, 5, 6, 9-15, 17, 18, 21, and 22 stand rejected on the ground of double-patenting. Applicant includes herein a terminal disclaimer of U.S. Patent No. 7,240,796 for which the grounds of double-patenting are based upon. Accordingly, Applicant requests that Examiner withdraw this rejection.

35 U.S.C. §102

Claims 1-3, 5, 6, 9-15, 17, 18, 21, and 22 stand rejected under 35 U.S.C. 102 as being anticipated by Hollenstein. Examiner asserts that the structure of Hollenstein is strictly analogous to the structure of the present invention. However, that is simply not the case. The present application teaches a tubular body having a closed end with an aperture and a planar surface. The planar surface extends fully between opposite sides of the inner wall surface of the side wall. Hollenstein teaches away from a closed end with a planar surface extending fully between the inner wall surfaces of the side wall. The valve taught in Hollenstein would not operate with a planar surface extending fully between the inner wall surfaces of the side wall because the Hollenstein teaches that the closed end must have a plurality of concentric channels running around each aperture. The concentric channels are necessary to store sealant such as silicone oil. See Col. 4, Lns. 7-10. The sealant is necessary for the retention of the membrane

against the closed end so that “the elastic diaphragm will come to rest again on the valve seat 3 so that the inside of the package will again be fluid-tightly shut off from the outside.” Unlike Hollenstein, the present invention relies upon the material of the membrane itself, that being cast polypropylene, to form the seal.

Cast polypropylene obviates the need for the channels and the sealant taught in Hollenstein. Furthermore, unlike the valve assembly taught in Hollenstein, the cast polypropylene diaphragm taught in the present invention is substantially resilient and maintains its form under heat. Thus, the valve assembly may be used in operating conditions outside of the coffee packages taught in Hollenstein.

Accordingly, Applicant respectfully submits that Hollenstein does not anticipate claims 1 and 13 of the currently amended application. Claims 2, 3, 5, 6, and 9-12 depend upon independent claim 1, and claims 14, 15, 17, 18, 21, and 22 depend upon independent claim 13. Accordingly, Applicant believes claims 2, 3, 5, 6, 9-12, 14, 15, 17, 18, 21, and 22 are now in allowable form as claims 1 and 13 are in allowable form.

Claim Rejections 35 U.S.C. §103

Examiner rejected claims 1-3, 5, 6, 9-15, 17, 18, 21, and 22 as being unpatentable over Hollenstein. Examiner asserts that it would have been obvious to “cast Hollenstein’s polypropylene membrane”. Again, this is simply not the case. The operation of the membrane of the present invention is different than that of the membrane taught in Hollenstein. Though Examiner seemingly discounts the operation of the two membranes, the operation is important in determining whether one skilled in the art would have modified the membrane taught in Hollenstein to make the membrane taught in the present invention.

The membrane taught in Hollenstein cannot function without the use of the valve seat which is filled with oil/sealant. Modifying the membrane in Hollenstein to include a cast polypropylene membrane would result in a valve that will simply not function. Namely, the valve in Hollenstein is configured to open under 1 to 2 millibars of pressure, but a cast polypropylene valve requires at least 4 millibars of pressure.

Furthermore, the membrane of the present invention functions differently. Unlike the diaphragm taught in Hollenstein, the membrane is subjected to high cooking heat. The present invention does not use a valve seat or oil. In fact, the use of oil in the present invention may potentially cause damage to the membrane, making the membrane inoperable after one use. Accordingly, it follows that one skilled in the art would not modify the membrane in Hollenstein to be formed of cast polypropylene because the valve would not work.

Applicant further submits that the limitation of a membrane made of cast polypropylene is not an obvious substitution of a known material as the valves are used under different conditions, one of which teaches away from the other. The check valve taught in Hollenstein is not intended for heating. Rather, the check valve is operable to let gases release so as to prevent the product being packaged from degrading – thus the different ranges in opening pressure. Since the opening pressure in Hollenstein is so low relative to the opening pressure taught in the present invention, the membrane must be made of a relatively flimsy material such as polypropylene. However, the flimsy material may not necessarily settle properly over the vent. Thus valve seats filled with oil are necessary for retaining a seal between the membrane and the closed end of the valve.

For the above reasons, Applicant submits that Hollenstein in fact teaches away from the use of cast polypropylene and does not teach or disclose a closed end having planar surface

extending fully between the inner surfaces of the side wall. Accordingly, Applicant requests that Examiner withdraw the §103 rejection based upon Hollenstein.

Summary

In view of the above amendment, Applicant believes the pending application is in condition for allowance. Applicant encourages Examiner to call with any questions relating to the application, Applicant's attorney may be reached at (248) 647-6000.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 07-1180.

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Respectfully submitted,

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